

**AMENDMENTS TO THE DRAWINGS:**

The amendments to the drawings are indicated in red ink on a marked-up copy of the originally-filed drawing sheet containing Fig. 5. The amendments to the drawings are incorporated in the attached, formal replacement drawing sheet. In particular, Fig. 5 has been amended to replace reference numerals "232" and "234" with reference numerals "252" and "254," respectively, located in the "MAINTENANCE JUDGING MEANS" depicted in Fig. 5.

Attachments:       Marked-up Copy of One Originally-filed Drawing Sheet  
                          One Replacement Sheet

## **REMARKS**

By this Amendment, Applicants have amended the specification; canceled claims 2 and 12 without prejudice or disclaimer; amended claims 1, 3-11, and 13-18; amended the abstract; and amended Fig. 5. No new matter has been added. Claims 1, 3-11, and 13-18 are pending in the application.

### **Claim for Priority under 35 U.S.C. § 120**

In the Office Action, the Examiner asserts that Applicants have not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. § 120, apparently because Applicants failed to refer to the parent application in the first sentence of the specification or in an application data sheet in accordance with 37 C.F.R. § 1.176. Office Action at 2. Applicants appreciate the Examiner's identification of Applicants unintentional and inadvertent failure to include a reference to the prior-filed application in the first sentence of the application. Accordingly, by this Amendment, Applicants have amended the specification such that the first sentence makes reference to the prior-filed application on which Applicants' claim for priority under 35 U.S.C. § 120 is based, U.S. application No. 09/893,628, filed June 29, 2001, which is now abandoned. Furthermore, Applicants have filed herewith a Petition under 37 C.F.R. § 1.78(a)(3) to Accept an Unintentionally Delayed Claim for Domestic Priority, which (1) indicates Applicants' amendment to the specification that makes the above-noted reference required by 35 U.S.C. § 120 and 37 C.F.R. § 1.78(a)(2) to the prior-filed application; (2) includes payment of the surcharge set forth in 37 C.F.R. § 1.17(t); and (3) includes a statement that the entire delay between the date the claim was due under 37 C.F.R. § 1.78(a)(2)(ii) and the date the claim was filed was unintentional. Therefore,

Applicants respectfully submit that Applicants have now fully complied with all of the conditions for receiving the benefit of the prior-filed application's filing date, and Applicants respectfully request the Examiner's acknowledgement of Applicants' compliance.

#### Objection to the Drawings

In the Office Action, the Examiner objected to Fig. 2 "because it does not have sufficiently descriptive labels." Office Action at 4. In particular, the Examiner asserts that "[b]lank boxes in drawings should be labeled descriptively unless it is a well-known component." Id. Applicants respectfully request reconsideration and withdrawal of the objection to Fig. 2 at least because there are no "blank boxes" depicted in Fig. 2. All of the exemplary elements depicted in Fig. 2 are identified by a reference number, and Applicants are unaware of any U.S. Patent and Trademark Office rule or patent statute (and the Examiner has not identified any such rule or statute) that requires Applicants to label any portion of Fig. 2 in manner other than the manner in which Applicants have already identified the exemplary elements depicted in Fig. 2. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection to Fig. 2.

In the Office Action, the Examiner objected to Fig. 5 and identified a number of minor, typographical errors in Fig. 5. Office Action at 4. Applicants appreciate the Examiner's identification of those errors, and Applicants have amended Fig. 5 to correct those errors as suggested by the Examiner. Accordingly, this Amendment includes a marked-up copy of the originally-filed drawing sheet containing Fig. 5, which shows Applicants' amendments to Fig. 5 in red ink, along with a Replacement Sheet, which

incorporates the amendments to Fig. 5. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection to Fig. 5.

#### Objection to the Abstract of the Disclosure

In the Office Action, the Examiner objected to the abstract of the disclosure and identified a minor, typographical error contained in the abstract of the disclosure. Office Action at 5. Applicants appreciate the Examiner's identification of the error, and Applicants have amended the abstract of the disclosure to correct that error as suggested by the Examiner. Accordingly, this Amendment includes a replacement Abstract of the Disclosure on a separate sheet, which incorporates the amendments to thereto. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection to the abstract of the disclosure.

#### Objection to the Specification and Disclosure

In the Office Action, the Examiner objected to the specification as containing several unclear passages and asserted that a number of portions of the specification include unclear passages. Office Action at 5-6. Applicants have amended the identified portions of the specification, such that they are more clear in meaning. No new matter has been added. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection to the specification.

The Examiner also objected to the disclosure and identified a number of minor informalities contained in the specification. Office Action at 6-7. Applicants appreciate the Examiner's identification of those minor informalities, and Applicants have amended

the specification, as suggested by the Examiner. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection to the disclosure.

#### Objection to the Claims

In the Office Action, the Examiner objected to claims 1, 3, 4, 6, 11-14, 16, and 17. Office Action at 7. The Examiner asserted that those claims include a number of informalities and suggested possible changes to the claims to obviate the objection. To the extent that other amendments to those claims have not obviated the asserted informalities, Applicants have amended those claims as suggested by the Examiner. Therefore, Applicants respectfully request reconsideration and withdrawal of the claim objections.

#### Rejection under 35 U.S.C. § 112, Second Paragraph

In the Office Action, the Examiner rejected claims 1-10, 13, 14, 17, and 18 under 35 U.S.C. § 112, second paragraph. Office Action at 9. In the rejection statement, the Examiner asserted that claims 1-10, 13, 14, 17, and 18 contain a number of limitations that are “vague and indefinite,” “unclear,” and/or “contradictory” to preceding limitations. Id. at 9-15. By this Amendment, Applicants have canceled claims 2 and 12 without prejudice or disclaimer, and have amended claims 1, 3-11, and 13-18, thereby obviating the rejection under § 112, second paragraph, of the claims. No new matter has been added. Unless otherwise noted herein, the amendments to the claims are not meant to further limit the scope of the claims, and the claims should be interpreted in that light.

Rejections under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 1-3, 7-13, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. (U.S. Pat. App. Pub. No. US 2001/0032109) in view of Deguchi et al. (U.S. Patent No. 6,608,666); rejected claims 5 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. in view of Deguchi et al. and further in view of Bazarnik (U.S. Patent No. 4,404,641); and rejected claims 6 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. in view of Deguchi et al. and Bazarnik and further in view of Makitani (Japanese Pat. App. Pub. No. 2000-012412). As outlined previously herein, Applicants have canceled claims 2 and 12 without prejudice or disclaimer, and have amended claims 1, 3-11, and 13-18, thereby obviating those rejections. To the extent, however, that the Examiner considers asserting new rejections based on those reference, Applicants respectfully submit that those references, taken either individually or in combination, fail to disclose or suggest all of the subject matter recited in each of those claims, as will be explained in more detail below.

The Examiner rejected claims 1-3, 7-13, 17, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. in view of Deguchi et al. Of those claims, claims 1 and 11 are the only independent claims. The Gonyea et al. and Deguchi et al. references, taken individually or in combination, fail to disclose or suggest all of the subject matter recited in each of Applicants' amended independent claims 1 and 11. Therefore, the Gonyea et al. and Deguchi et al. references cannot anticipate or render obvious either of those independent claims. See, e.g., M.P.E.P. §§ 2131, 2143.

Applicants' amended independent claim 1 is directed to a part maintenance system for a semiconductor processing system. The part maintenance system includes

a factory-side system having at least one semiconductor processing system, and a vendor-side system operated by an administrator who manages maintenance of the semiconductor processing system. The factory-side system includes a factory-side sending/receiving means, which sends and receives information to and from the vendor-side system through a bidirectional network. The factory-side system further includes a preset means, which stores at least one of a predetermined allowable limit value of operation time, a predetermined number of operations of a part of the semiconductor processing system, a normal operation time and an allowable limit value of the normal operation time, and a time-passage change and an allowable limit value of the time-passage change. The factory-side system also includes a measuring means, which measures actual operation time or a number of actual operations of the part. The factory-side system further includes a maintenance judging means, which compares the actual operation time or the number of actual operations and the predetermined allowable limit value with each other to form a judgment of an operation state of the part, and which sends an order processing request of the part to the vendor-side system through the bidirectional network via the factory-side sending/receiving means in accordance with a result of the judgment. The vendor-side system includes a vendor-side sending/receiving means, which sends and receives information to and from the factory-side system through the bidirectional network. The vendor-side system also includes a part order processing means, which processes an order of a part when the vendor-side sending/receiving means receives an order processing request of the part from the factory-side system through the bidirectional network. The factory-side system stores at least two stage limit value levels as the predetermined allowable limit value, which is previously set by the preset means. When the maintenance judging

means judges that the actual operation time or the number of actual operations reaches a first stage limit value level, the factory-side sending/receiving means sends an order processing request of a replacement for the part to the vendor-side system through the bidirectional network. When the actual operation time or the number of actual operations reaches a second stage limit value level, the factory-side system carries out a notice processing.

Neither the Gonyea et al. reference nor the Deguchi et al. reference discloses or suggests all of the subject matter recited in Applicants' independent claim 1. For example, neither Gonyea et al. nor Deguchi et al. discloses or suggests a part maintenance system for a semiconductor processing system, including at least a factory-side system including a maintenance judging means, which compares an actual operation time or a number of actual operations and a predetermined allowable limit value with each other to form a judgment of an operation state of the part, and which sends an order processing request of the part to a vendor-side system through a bidirectional network via a factory-side sending/receiving means in accordance with a result of the judgment, wherein when the maintenance judging means judges that the actual operation time or the number of actual operations reaches a first stage limit value level, the factory-side sending/receiving means sends an order processing request of a replacement for the part to the vendor-side system through the bidirectional network, and when the actual operation time or the number of actual operations reaches a second stage limit value level, the factory-side system carries out a notice processing.

In contrast to the subject matter recited in Applicants' independent claim 1, the Gonyea et al. reference discloses a system and method of predicting a maintenance schedule and costs for performing future service events on a product formed from a



plurality of components. The maintenance schedule and costs of the future service events are used to predict the cost and price of a long term service agreement for the product. A scheduler predicts the maintenance schedule based on the operating conditions the product is exposed to, as well as on design limits or constraints for the components of the system. The scheduler determines the operating time for each sub-component based on the operating conditions for a predetermined time period and compares it to the design limit for the component. Once a design limit is exceeded for a sub-component, the scheduler then schedules a maintenance event to repair or replace the component and its related sub-components. A simulator takes the predicted maintenance schedule and simulates the maintenance events to determine the cost of the maintenance events. An aggregator then aggregates the predicted maintenance schedule and the predicted costs for the length of the service agreement to obtain a complete schedule of future maintenance events and a total cost representative of fulfilling the service agreement for the product.

The Gonyea et al. reference, however, does not disclose a part maintenance system including a factory-side system having at least one semiconductor processing system, and a vendor-side system operated by an administrator who manages maintenance of the semiconductor processing system. Rather the Gonyea et al. reference discloses a system and method of predicting a maintenance schedule and costs for performing future service events on a product formed from a plurality of components in order to predict the cost and price of a long term service agreement for the product. In short, the Gonyea et al. reference does not disclose a factory-side sending/receiving means at least because there is no vendor-side sending/receiving means to receive information from the factory-side sending/receiving means. Further,

the Gonyea et al. reference does not disclose a maintenance judging means, which compares the actual operation time or the number of actual operations and the predetermined allowable limit value with each other to form a judgment of an operation state of the part, and which sends an order processing request of the part to the vendor-side system through a bidirectional network via the factory-side sending/receiving means in accordance with a result of the judgment. Rather, Gonyea et al. merely discloses predicting a maintenance schedule and costs for a length of a service agreement to obtain a complete schedule of future maintenance events and a total cost representative of fulfilling the service agreement for a product.

The Deguchi et al. reference does not overcome the above-outlined deficiencies of Gonyea et al. In the rejection statement, however, the Examiner asserts that it would have been obvious to modify the Gonyea et al. system and method to include a “vendor-side sending/receiving means which sends and receives information to and from said factory-side system through a network, as taught by Deguchi, because the combination would have allowed greater utility in the invention of Gonyea by providing application to a wider variety of environments and, as suggested by Deguchi, provided a corresponding means for communicating with the vendor of Gonyea with improved accessibility by allowing access to the vendor remotely (column 7, lines 10-22) while allowing remote monitoring to provide rapid problem correction (column 7, lines 46-52).” Office Action at 18. Applicants respectfully disagree with that assertion.

The Deguchi et al. reference discloses a trouble remedy or periodic maintenance of a manufacturing apparatus installed in a semiconductor manufacturing factory. Referring to Fig. 5, the Deguchi et al. reference discloses a business office 101 of a vendor, which provides a semiconductor device manufacturing apparatus. The

business office 101 includes a host management system 108 for providing a maintenance database for the manufacturing apparatus, a plurality of operation terminal computers 110, and a LAN (Local Area Network) 109, which connects the host management system 108 and computers 110 to build an intranet. The host management system 108 includes a gateway for connecting the LAN 109 to Internet 105 as an external network of the business office 101, and a security function for limiting external accesses. Manufacturing factories 102 through 104 may belong to different manufacturers or the same manufacturer. Each of the factories 102 through 104 is equipped with a plurality of manufacturing apparatuses 106, a LAN (Local Area Network) 111, which connects these apparatuses 106 to construct an intranet, and a host management system 107 serving as a monitoring apparatus for monitoring the operation status of each manufacturing apparatus 106. The host management system 107 in each of the factories 102 through 104 has a gateway for connecting the LAN 111 in the factory to the Internet 105 as an external network of the factory. Each factory 102 through 104 can access the host management system 108 of the vendor 101 from the LAN 111 via the Internet 105. The factory notifies the vendor via the Internet 105 of status information (e.g., the symptom of a manufacturing apparatus in trouble) representing the operation status of each manufacturing apparatus 106, and receives response information (e.g., information designating a remedy against the trouble, or remedy software or data) corresponding to the notification or maintenance information, such as the latest software or help information.

Like the Gonyea et al. reference, the Deguchi et al. reference does not disclose a part maintenance system for a semiconductor processing system, including at least factory-side system including a maintenance judging means, which compares an actual

operation time or a number of actual operations and a predetermined allowable limit value with each other to form a judgment of an operation state of the part, and which sends an order processing request of the part to a vendor-side system through a bidirectional network via a factory-side sending/receiving means in accordance with a result of the judgment, wherein when the maintenance judging means judges that the actual operation time or the number of actual operations reaches a first stage limit value level, the factory-side sending/receiving means sends an order processing request of a replacement for the part to the vendor-side system through the bidirectional network, and when the actual operation time or the number of actual operations reaches a second stage limit value level, the factory-side system carries out a notice processing. Rather, in the Deguchi et al. system, a factory notifies a vendor via the Internet 105 of status information (e.g., the symptom of a manufacturing apparatus in trouble) representing the operation status of each manufacturing apparatus 106, and receives response information (e.g., information designating a remedy against the trouble, or remedy software or data) corresponding to the notification or maintenance information, such as the latest software or help information.

In short, the Deguchi et al. reference does not disclose a system in which the factories have a factory-side maintenance judging means, which compares an actual operation time or a number of actual operations and a predetermined allowable limit value with each other to form a judgment of an operation state of the part, and which sends an order processing request of the part to a vendor-side system through a bidirectional network via the factory-side sending/receiving means in accordance with a result of the judgment. Applicants claimed factory-side maintenance judging means may result in an advantage over prior art systems and methods, for example, because a

factory operating a semiconductor processing system does not necessarily need to rely on information received from a vendor, for example, such that operation of a semiconductor processing system may be discontinued with a high degree of reliability even when, for example, a vendor is unable to communicate with the factory-side system due to a problem on with a vendor-side server such that processing cannot be executed in the vendor-side system.

For at least the above-outlined reasons, the Gonyea et al. and Deguchi et al. references, taken individually or in combination, do not disclose or suggest all of the subject matter recited in Applicants' amended, independent claim 1. Therefore, Applicants' amended, independent claim 1 is patentably distinguishable from those references.

Concerning Applicants' amended, independent claim 11, that claim is directed to a part maintenance method in a part maintenance system for a semiconductor processing system in which a factory-side system having at least one semiconductor processing system, and a vendor-side system operated by an administrator who manages maintenance of the semiconductor processing system are connected to each other through a bidirectional network. The method includes presetting at least one of a predetermined allowable limit value of operation time, a predetermined number of operations of the semiconductor processing system via the factory-side system, a normal operation time and an allowable limit value of the normal operation time, and a time-passage change and an allowable limit value of the time-passage change. The method further includes measuring actual operation time or a number of actual operations of the part via the factory-side system. The method also includes comparing the actual operation time or the number of actual operations and the predetermined

allowable limit value with each other via the factory-side system to form a judgment of an operation state of the part, and sending an order processing request of the part to the vendor-side system through the bidirectional network in accordance with a result of the judgment. The method also includes carrying out the order processing request of the part when the vendor-side system receives the order processing request of the part from the factory-side system through the bidirectional network. The predetermined allowable limit value, which is previously set by the factory-side system, is at least a two stage limit value. When the factory-side system judges that the actual operation time or the number of actual operations reaches a first stage limit value level, the order processing request of the part is sent to the vendor-side system through the bidirectional network. When the factory-side system judges that the actual operation time or the number of actual operations reaches a second stage limit value level, a notice processing is carried out.

For reasons at least similar to those outlined above with respect to amended independent claim 1, the Gonyea et al. and Deguchi et al. references, taken individually or in combination, fail to disclose or suggest all of the subject matter recited in amended independent claim 1. For example, those reference do not disclose or suggest a part maintenance method in a part maintenance system for a semiconductor processing system in which a factory-side system having at least one semiconductor processing system, and a vendor-side system operated by an administrator who manages maintenance of the semiconductor processing system are connected to each other through a bidirectional network, wherein the method includes comparing an actual operation time or a number of actual operations and a predetermined allowable limit value with each other via the factory-side system to form a judgment of an operation

state of the part, and sending an order processing request of the part to the vendor-side system through the bidirectional network in accordance with a result of the judgment. Therefore, Applicants' amended independent claim 11 is patentably distinguishable from the Gonyea et al. and Deguchi et al. references.

#### Rejections of Dependent Claims

In the Office Action, claims 5 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. in view of Deguchi et al. and further in view of Bazarnik; and claims 6 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gonyea et al. in view of Deguchi et al. and Bazarnik and further in view of Makitani. Claims 5, 6, 15, and 16 ultimately depend from one of independent claims 1 and 11. Therefore, those dependent claims should be allowable for at least the same reasons claims 1 and 11 should be allowable.

#### Conclusion

For at least the reasons set forth above, amended independent claims 1 and 11 should be allowable. Dependent claims 3-10 and 13-18 depend from independent claims 1 and 11, respectively. Consequently, those dependent claims should be allowable for at least the same reasons claims 1 and 11 are allowable.

Therefore, Applicants respectfully request the reconsideration of this application, the withdrawal of the outstanding objections and claim rejections, and the allowance of claims 1, 3-11, and 13-18.

If the Examiner believes that a telephone conversation might advance prosecution, the Examiner is cordially invited to call Applicants' representative at 571-203-2739.

Applicants respectfully submit that the Office Action contains numerous assertions concerning the related art and the claims. Regardless of whether those assertions are addressed specifically herein, Applicants respectfully decline to automatically subscribe to them.


Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 6-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: April 12, 2005

By:

  
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**Attachments:** Marked-up Copy of One Originally-filed Drawing Sheet  
One Replacement Drawing Sheet  
Replacement Abstract of the Disclosure

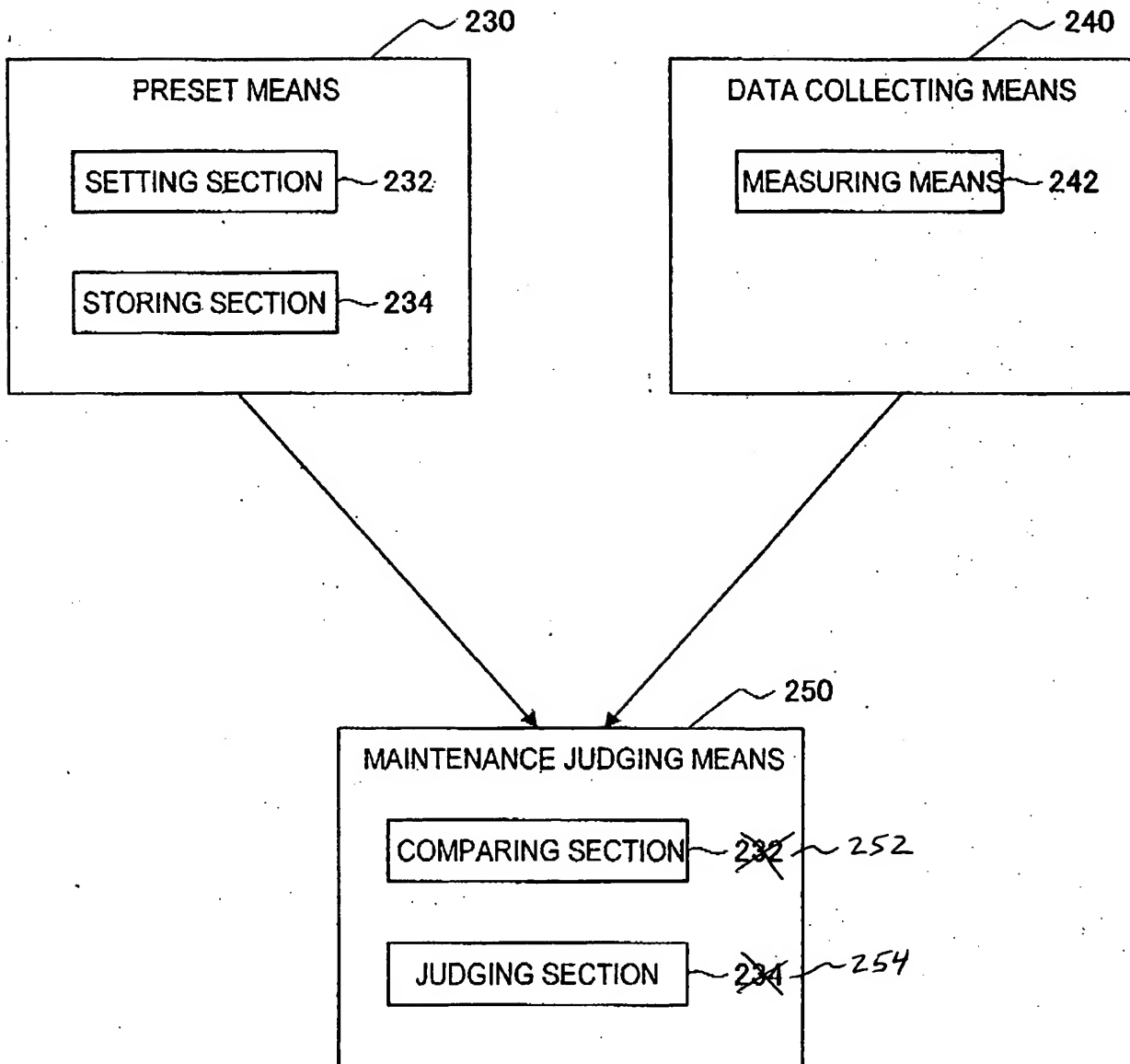




Abstract of the Disclosure

A factory-side system having at least one semiconductor processing system, and a vendor-side system operated by an administrator who manages the maintenance of the semiconductor processing system are connected to each other through a bidirectional network. The factory-side system stores an allowable limit value of operation time of a preset part, measures actual operation time of the part, compares the actual operation time and the allowable limit value with each other to judge the operation state of the part, and sends an order processing request of the part to the vendor-side system through the network in accordance with a result of the judgment. If the vendor-side system receives the order processing request of the part, the vendor-side system carries out the order processing of the part. With this, it is possible to prevent trouble, accident and the like of the part.

FIG.5



5/15



FIG.5

